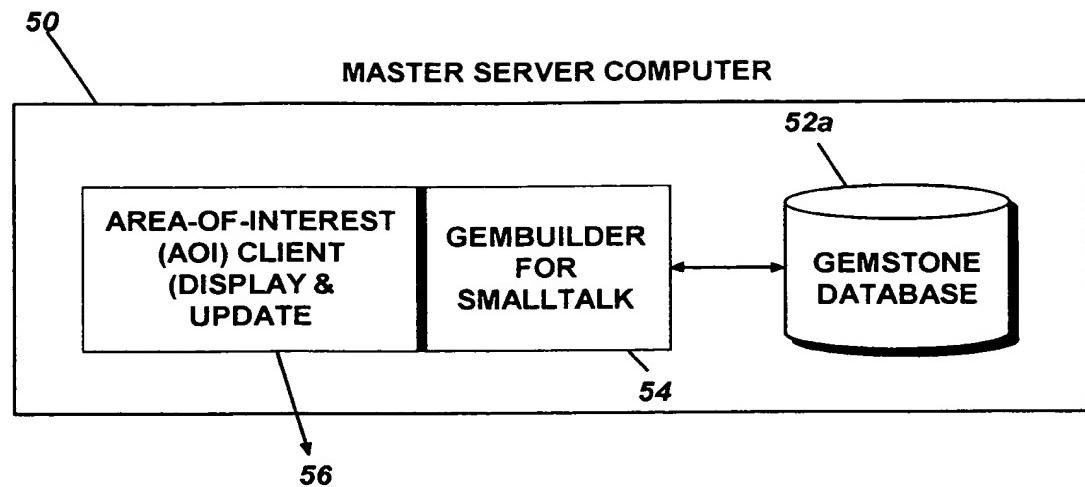
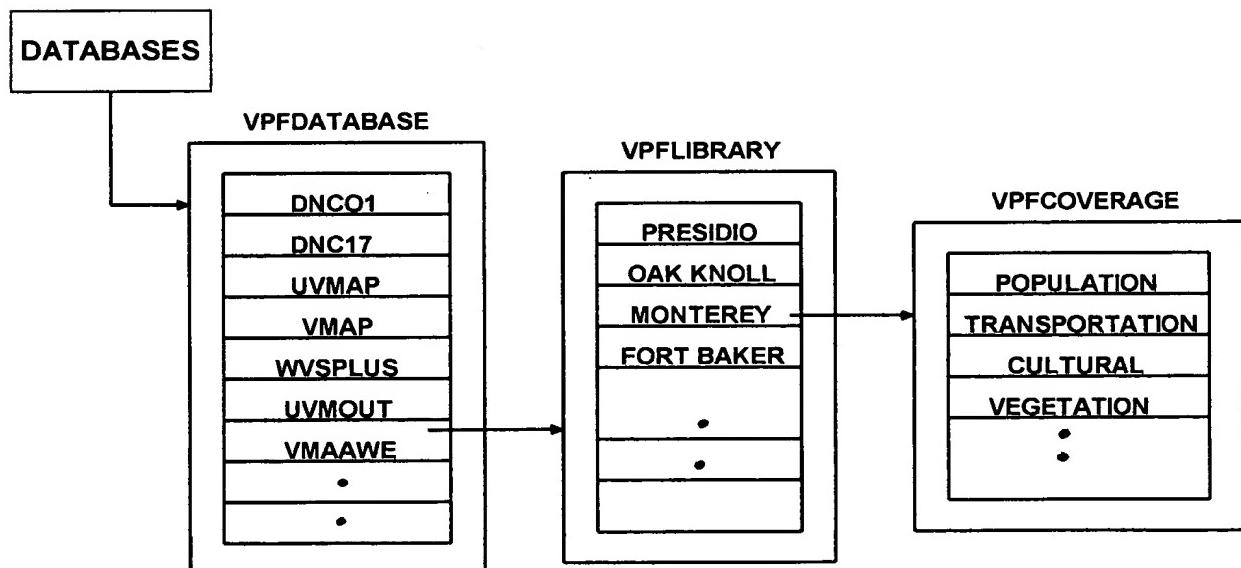


**FIG. 1**

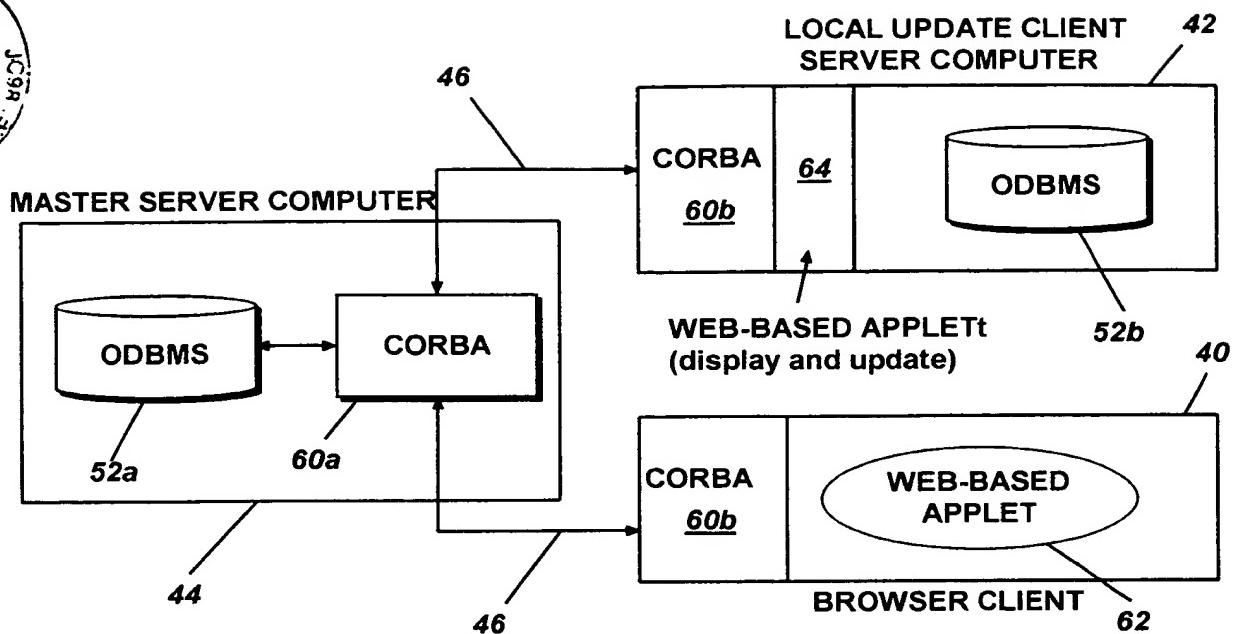
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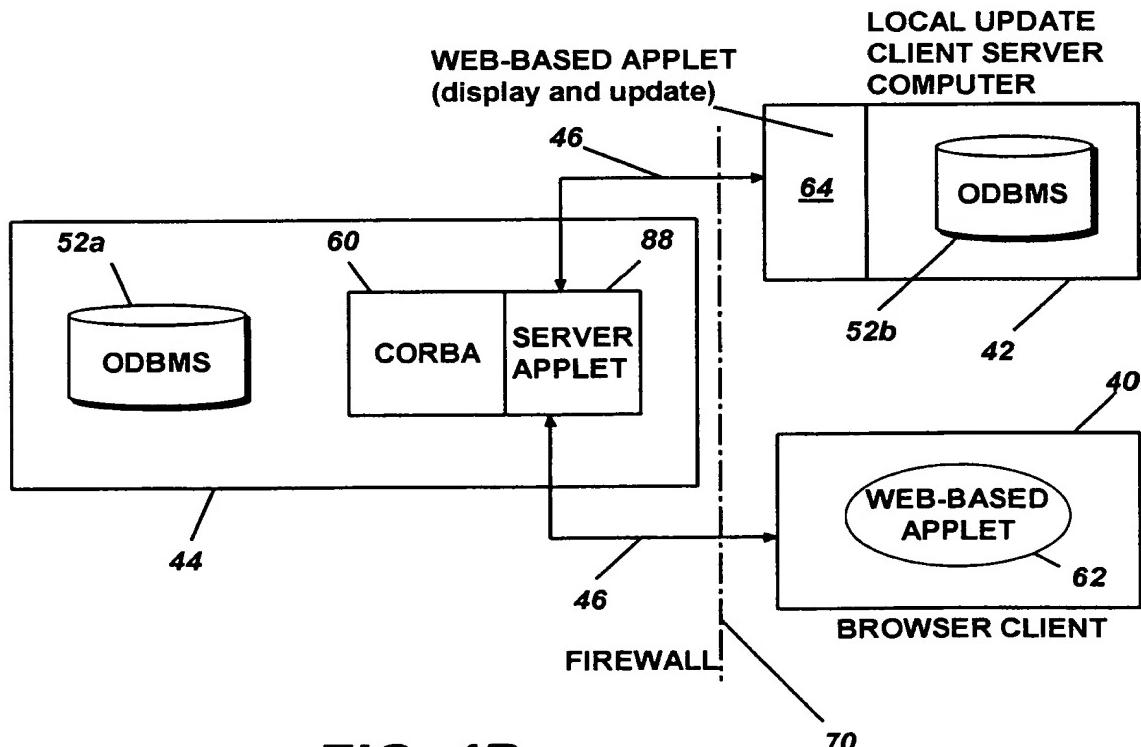
**FIG. 2**



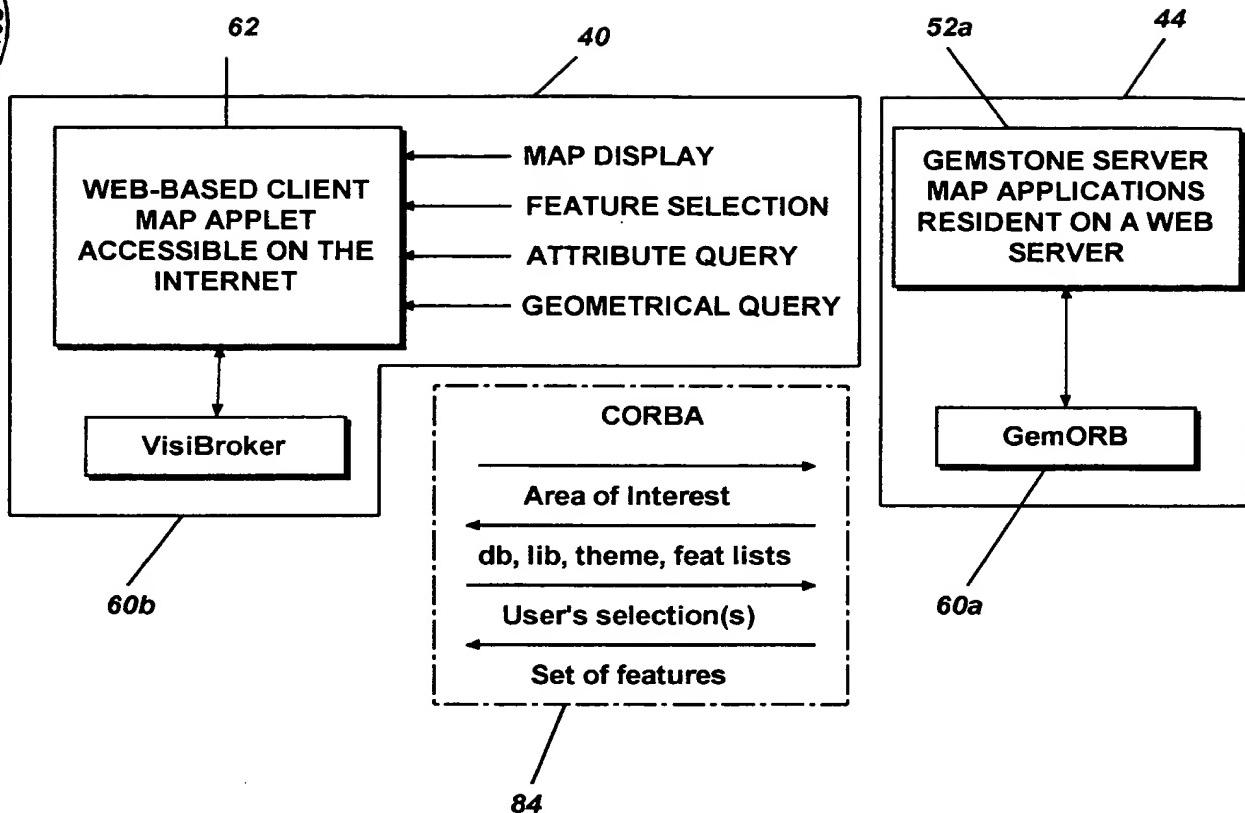
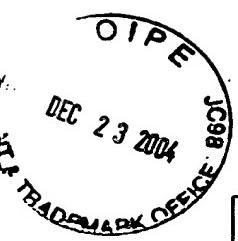
**FIG. 3**



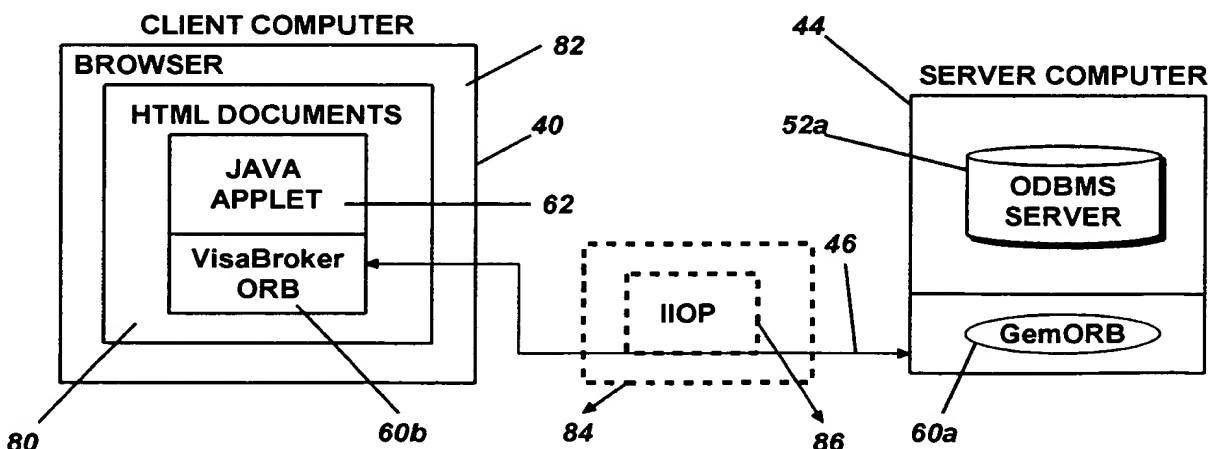
**FIG. 4A**



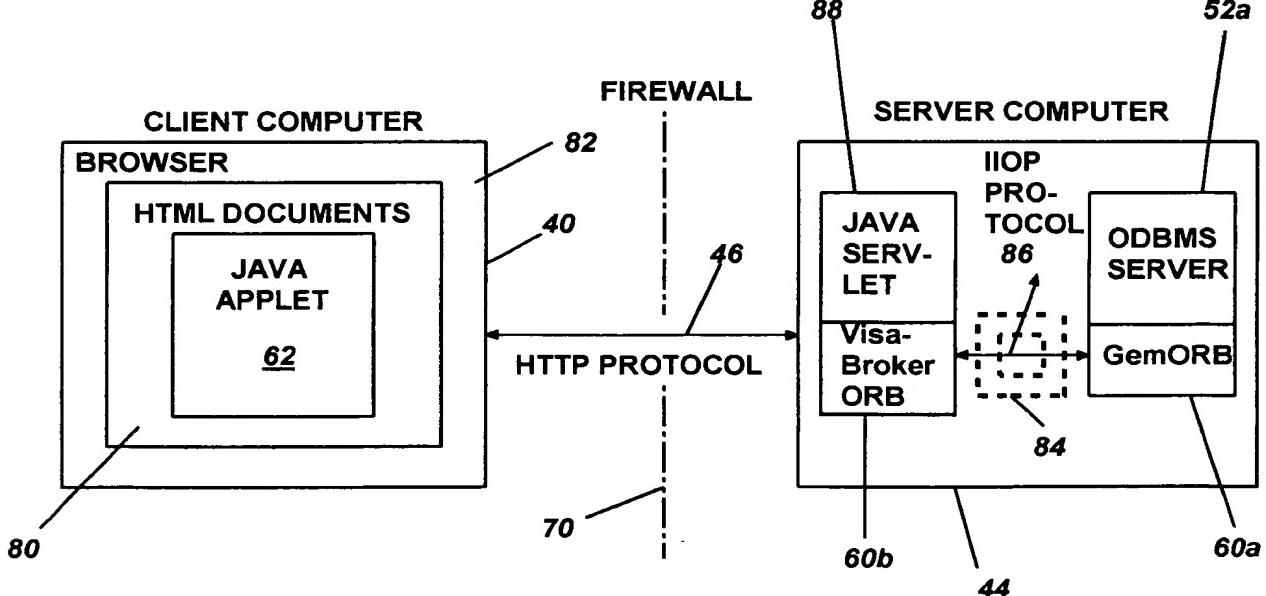
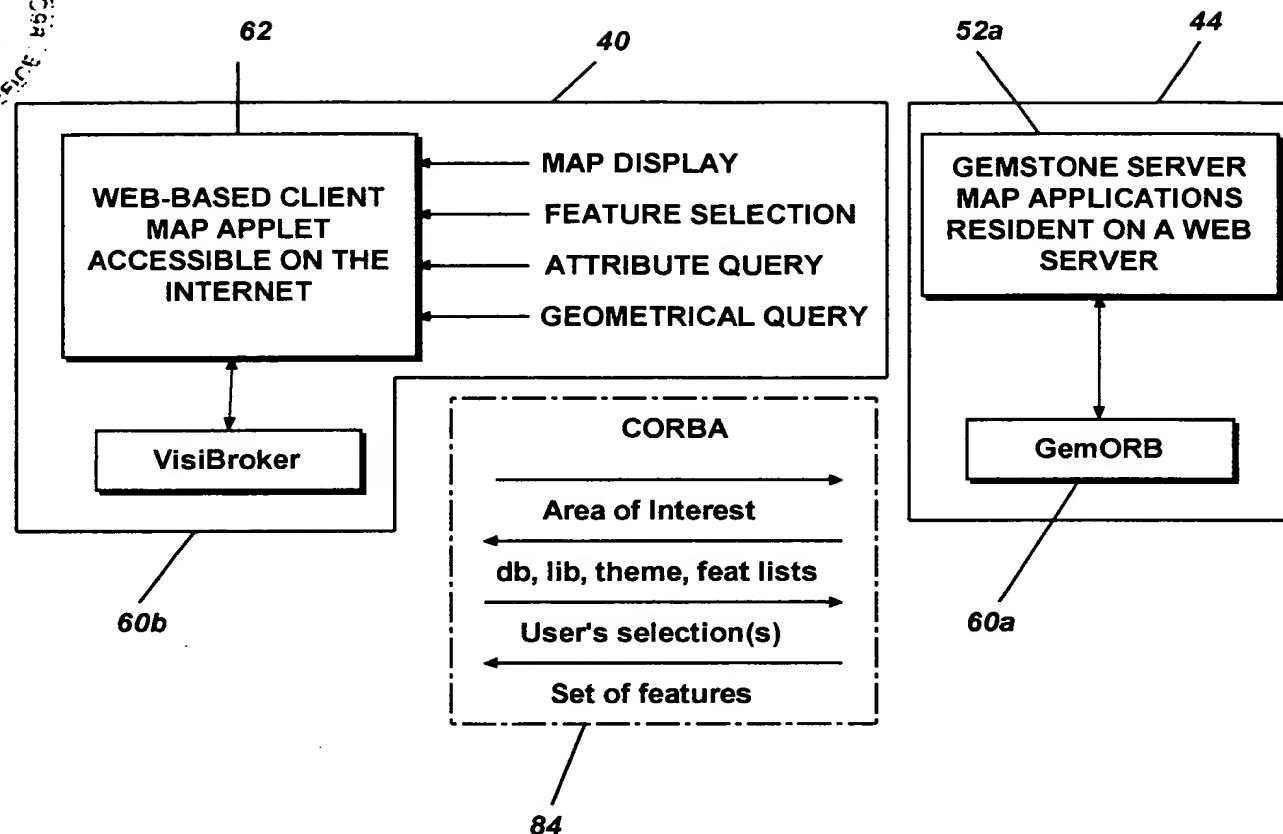
**FIG. 4B**

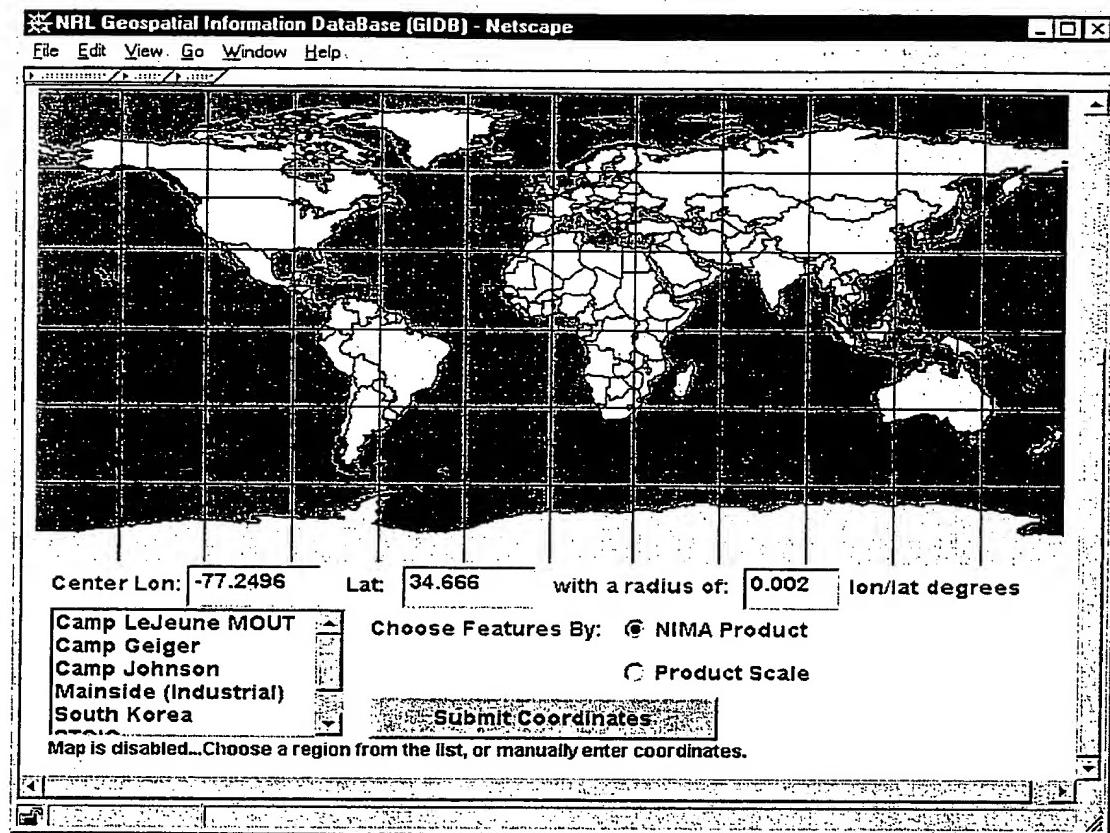


**FIG. 5B**

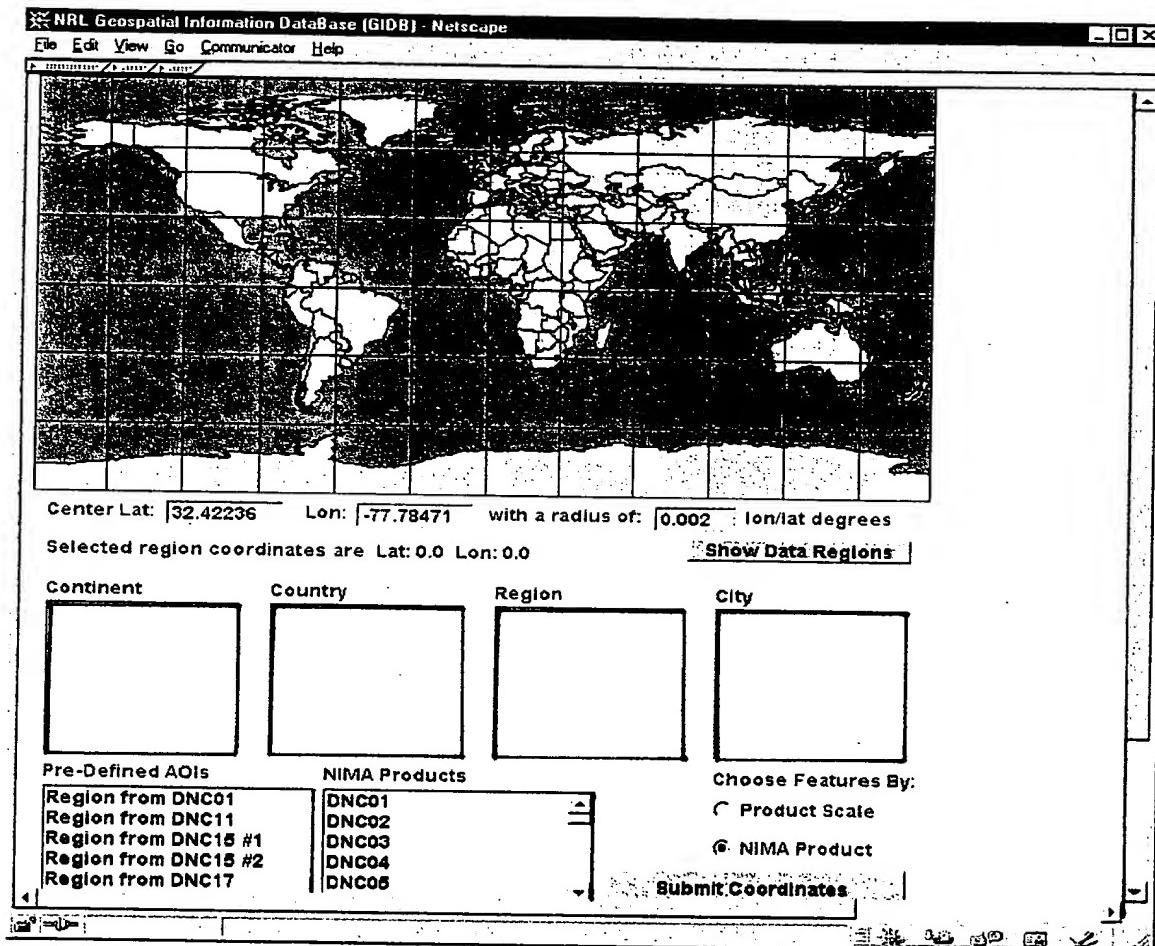


**FIG. 5A**



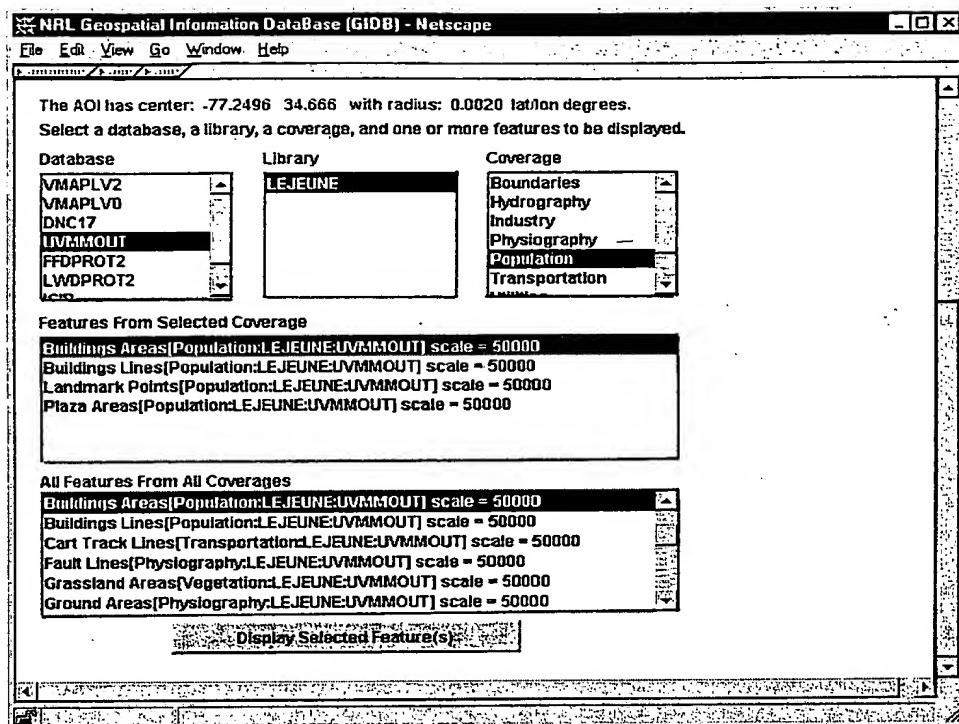


**FIG. 7**

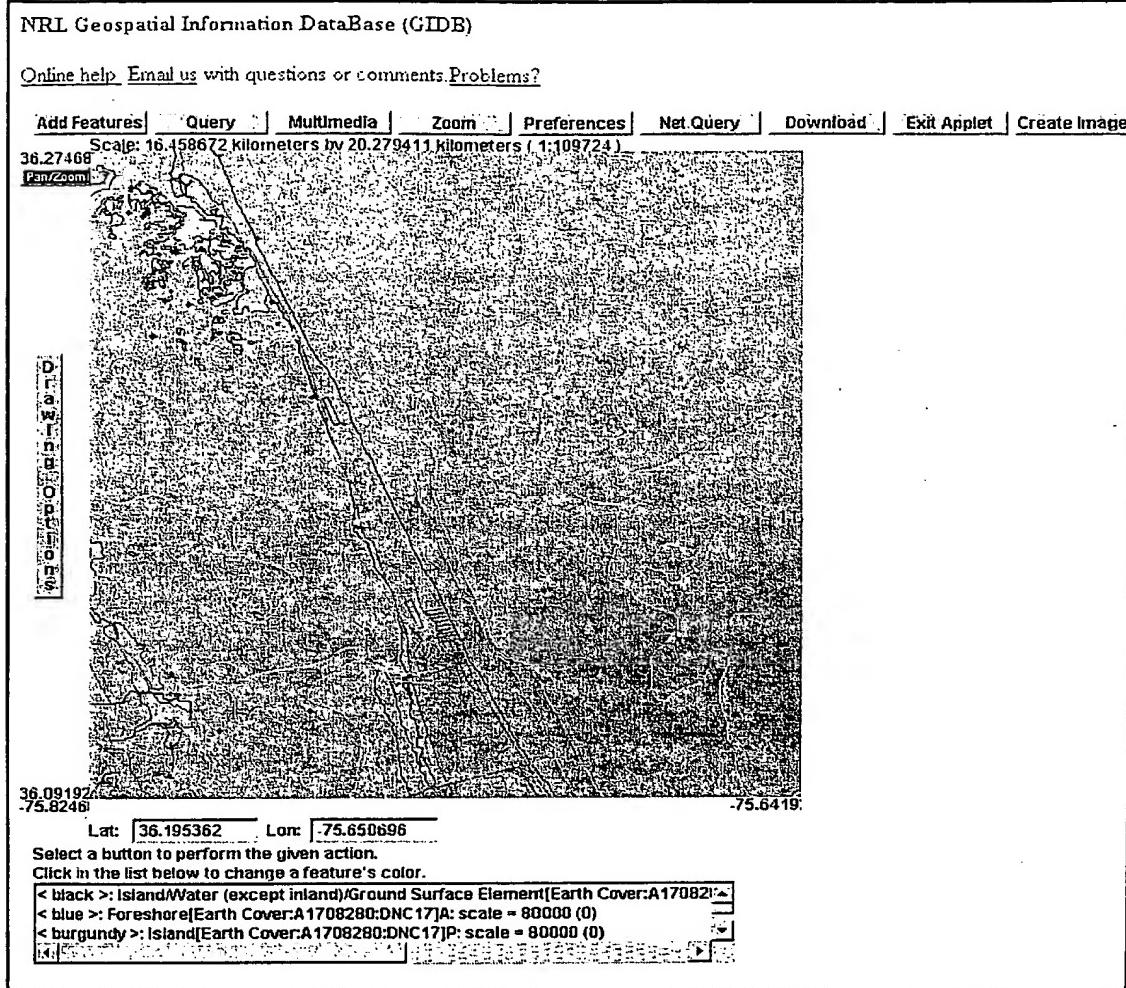


**FIG. 8**

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**FIG. 9**



**FIG. 10**



Datasets **DNC17[Edition 9: Eastern United States]**

Scale **A1708375[Currituck Beach Light to Wimbl]**

Features **Bottom Characteristics points[Hydrography]**

Query **Q1: Bottom Characteristics points[Hydrography]**

**Results for Selected Query**

201 Bottom Characteristics points[Hydrography]:A1708375
198 Bottom Characteristics points[Hydrography]:A1708375
200 Bottom Characteristics points[Hydrography]:A1708375
[...]

**Attributes for Selected Result**

Secondary Material Characteristics -- Unknown
Material Composition Category -- Unknown
Material Composition Underlying -- Unknown
Underlying Material -- Unknown
FACC Code -- BF010: US-Bottom Characteristics UK-Quality of the Physical Surface Characteristics -- Soft
Material Composition Secondary -- Unknown

**Click here for attribute-level query**

**Geometrical** **Topological** **Clear** **Done**

**Up:Selected** **Up:All** **Delete Set** **Delete All**

**FIG. 11**



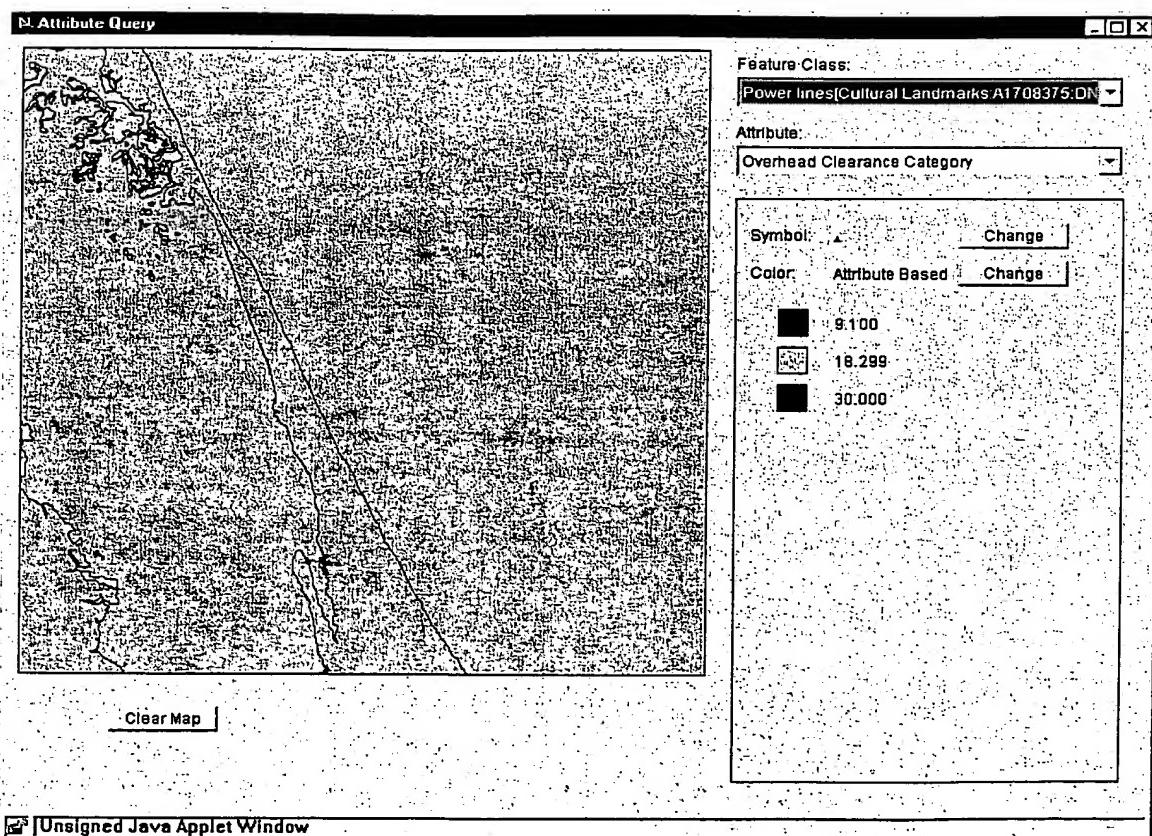
M. Select Time Range

Start Time:	Year:	Month:	Day:	Hour:
	1980 1981 1982 1983 1984 1985 1986	January February March April May June	01 02 03 04 05 06 07	00 01 02 03 04 05 06
End Time:	1995 1996 1997 1998 1999 2000	January February March April May June	01 02 03 04 05 06	00 01 02 03 04 05 06

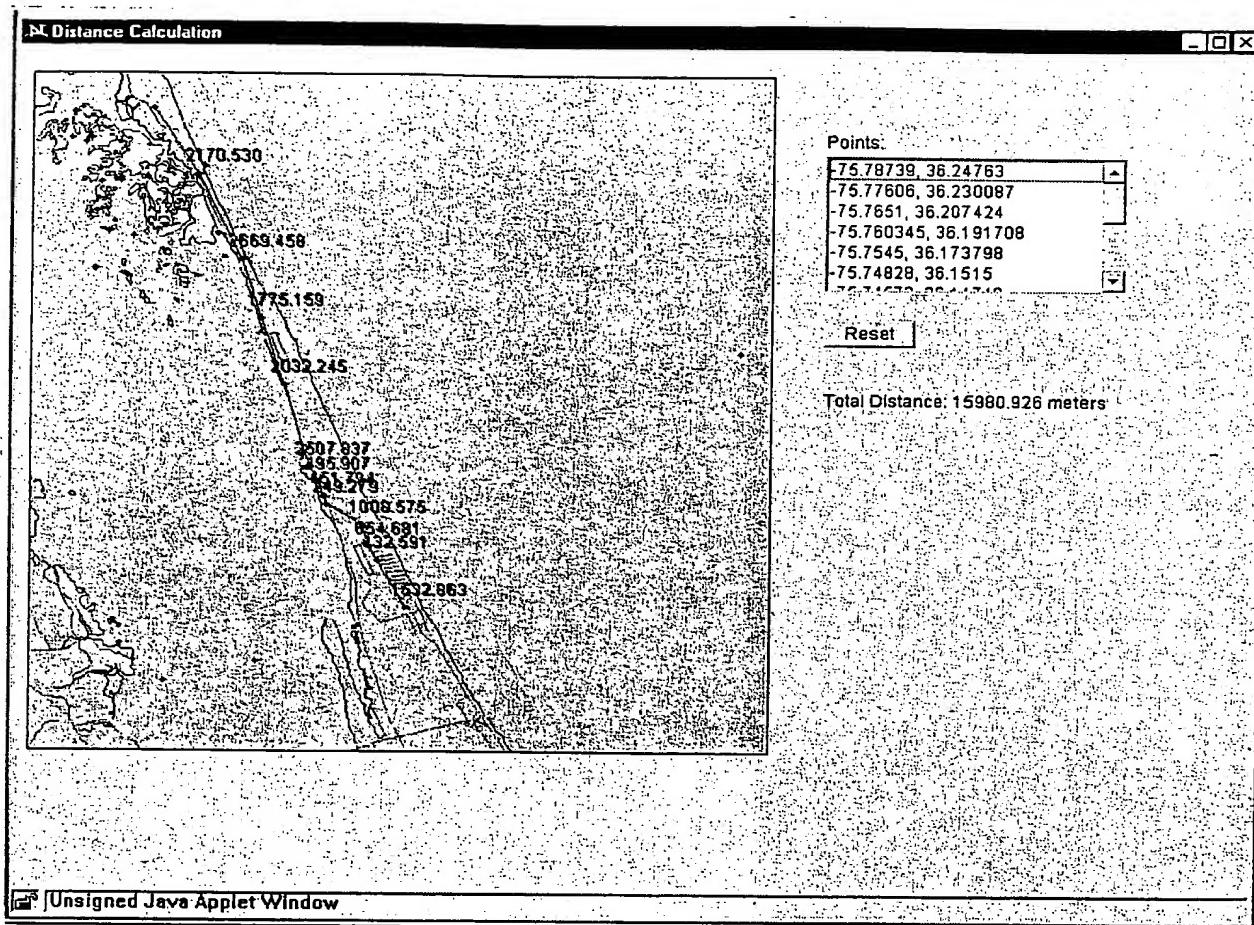
**Continue** **Exit**

[Unsigned Java Applet Window]

**FIG. 12**



**FIG. 13**



**FIG. 14**



```
GeoPoint gpPoint1 = (GeoPoint)vtrGeopoints.elementAt(i);
GeoPoint gpPoint2 = (GeoPoint)vtrGeopoints.elementAt(i+1);
double distance = gpPoint1.greatCircleDistance(gpPoint2) * 6000 * 0.3048; // returns nautical miles.
multiply by 6000 for feet. multiply by 0.3048 to get meters.
```

```
public class GeoPoint{
```

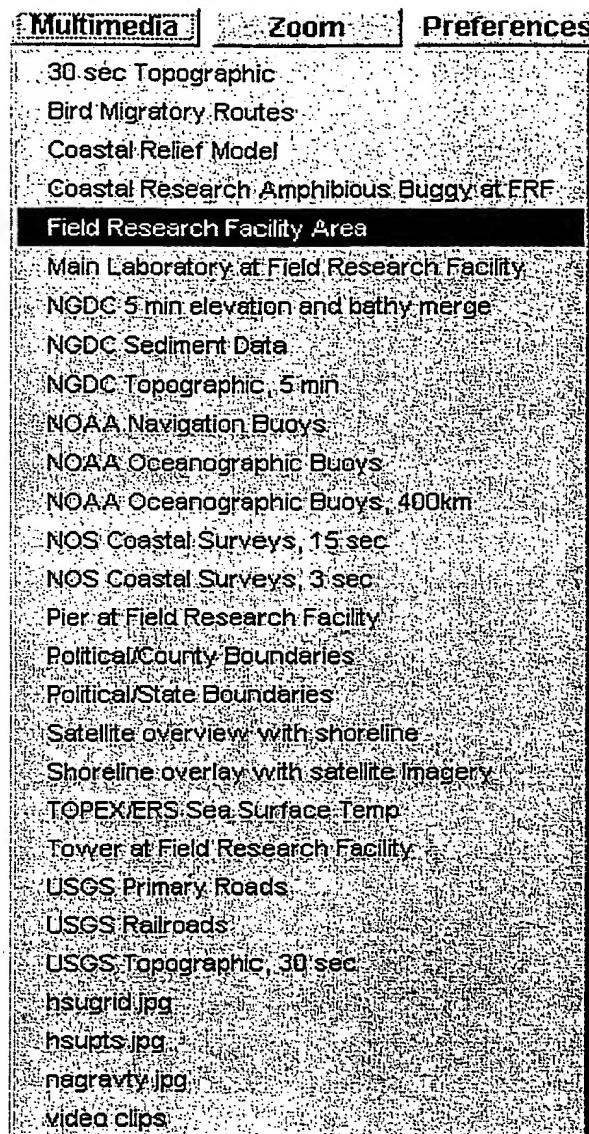
```
    public double greatCircleDistance(GeoPoint point2) {
        double nauticalMiles = 0.0f;
        double step1;
        double degreesPerRadian = 180.0 / Math.PI;
        double nauticalMilesPerDegree = 60.0;
        double lat1 = latInRadians();
        double lon1 = lonInRadians();
        double lat2 = point2.latInRadians();
        double lon2 = point2.lonInRadians();

        // Calculate step 1 in radians
        step1 = Math.acos(Math.sin(lat1) * Math.sin(lat2) +
        Math.cos(lat1) * Math.cos(lat2) * Math.cos(lon1 - lon2));

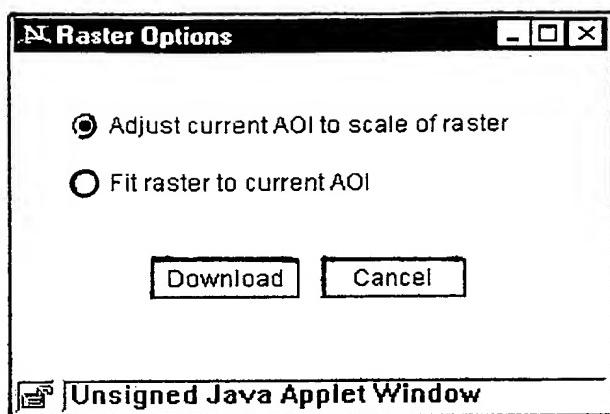
        nauticalMiles = step1 * degreesPerRadian * nauticalMilesPerDegree;
        return nauticalMiles;
    }

}
```

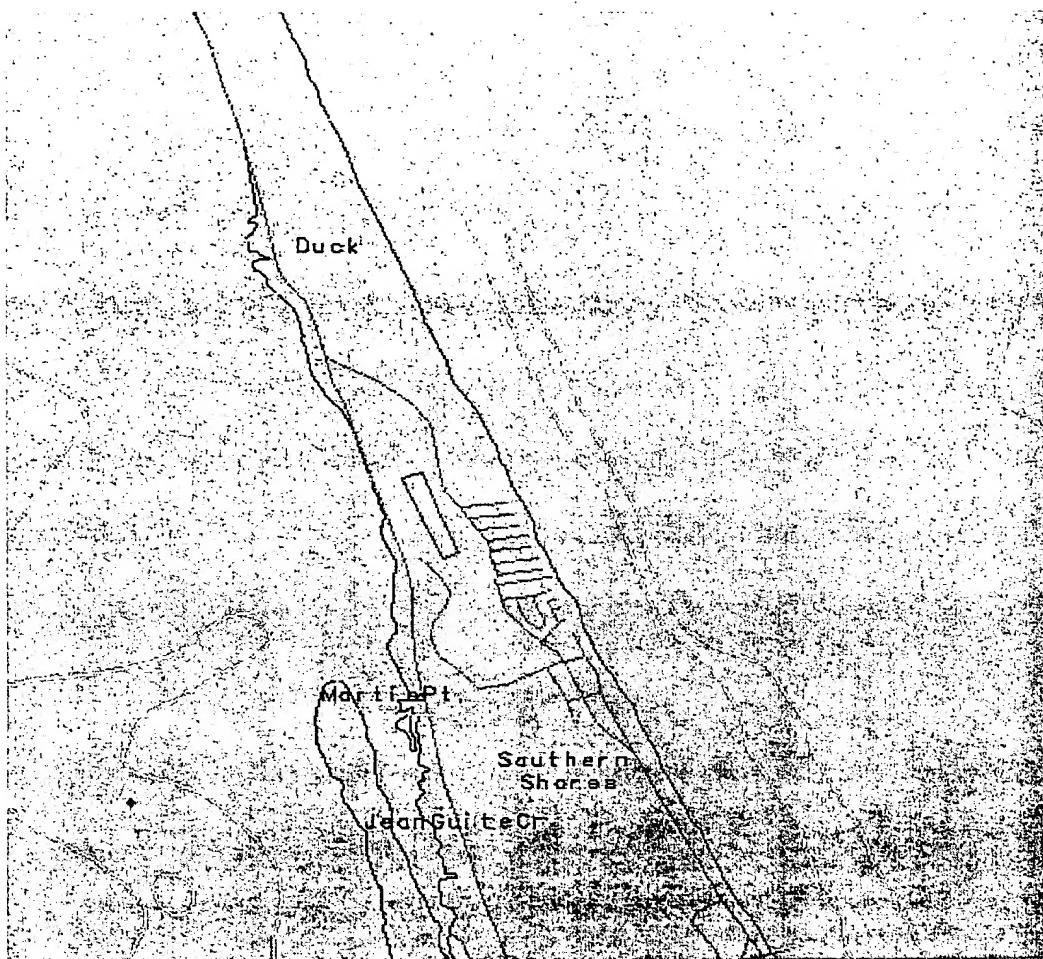
**FIG. 14A**



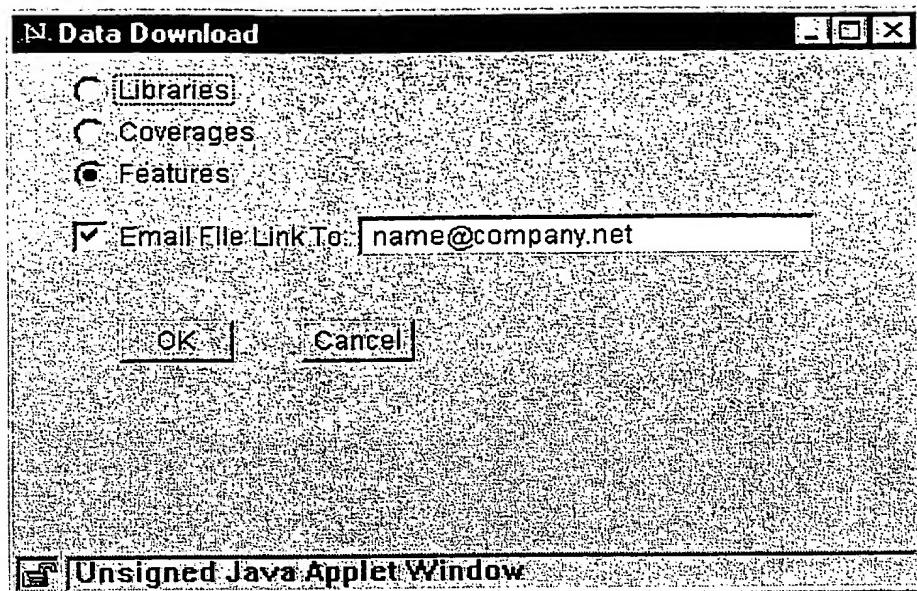
**FIG. 15**



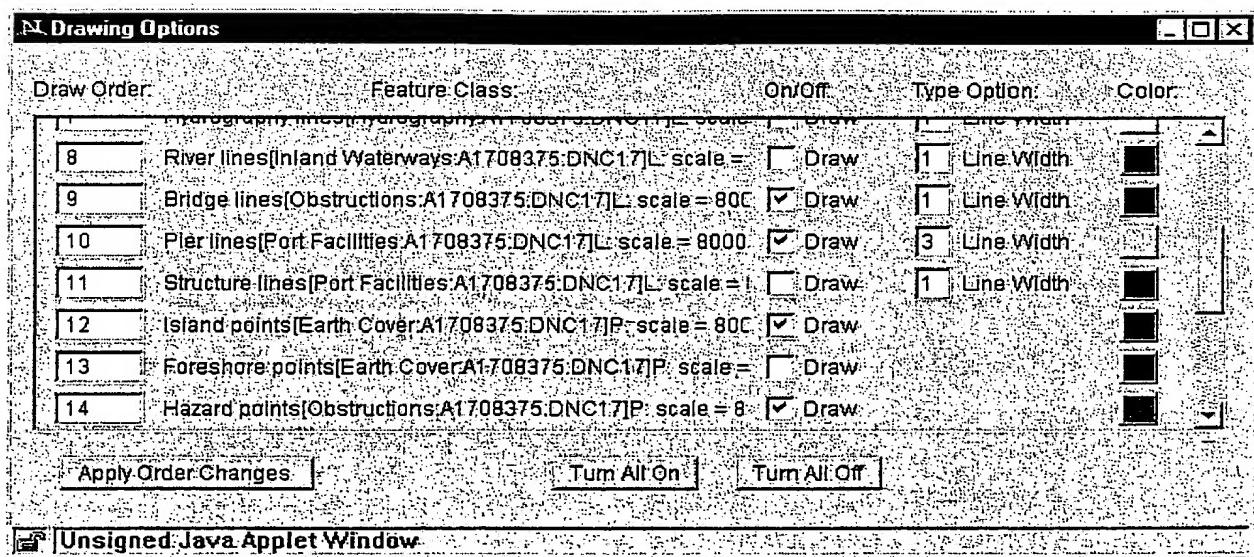
**FIG. 16**



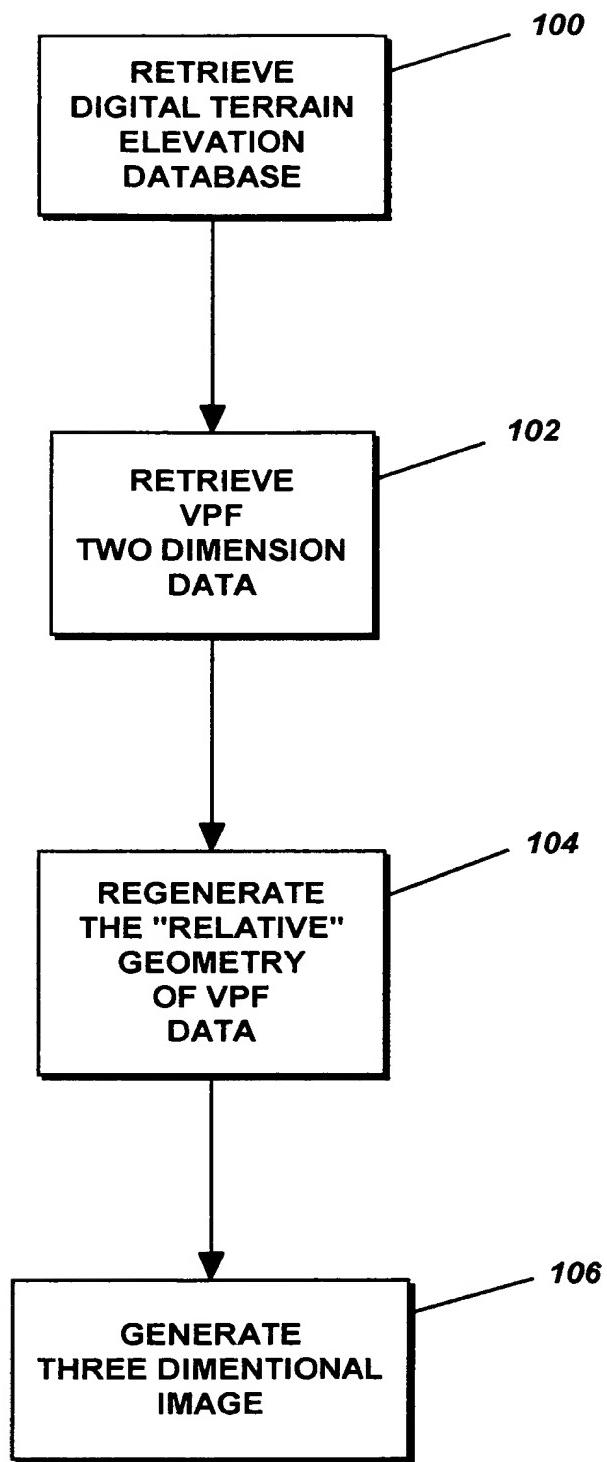
**FIG. 17**



**FIG. 18A**



**FIG. 18B**



**FIG. 19**



```
VRMLObject
 VRMLBuilding
 VRMLHydroArea
 VRMLVegArea
 VRMLLineFeature
 VRMLBarrierLine
 VRMLHydroLine
 VRMLTransLine
 VRMLUtilityLine
 VRMLPointFeature
```

**FIG. 20**

**FIG. 21**

```
STRUCTURE SHAPE OF ROOF
Flat
ssr = 41
Pitched
ssr = 42
```

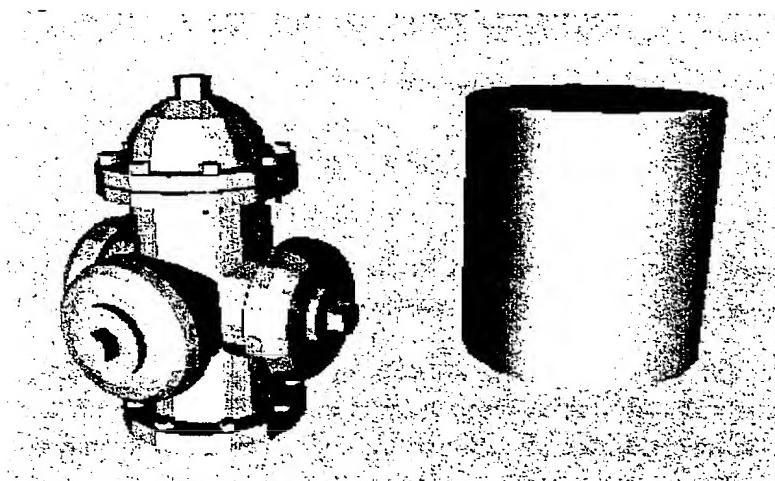
VPF	VRML
#bldpopa	#VRMLBuilding
#bldinda	#VRMLBuilding
#plazaa	#VRMLPlazaArea
#lakeresa	#VRMLHydroArea
#inshorel	#VRMLHydroLine
#watrcrsI	#VRMLHydroLine
#roadl	#VRMLTransLine
#trackl	#VRMLTransLine
#barrierl	#VRMLBarrierLine
#polbndl	#VRMLBarrierLine
#telel	#VRMLUtilityLine
#obstrp	#VRMLPointFeature
#landmrkp	#VRMLPoint Feature

**FIG. 22**

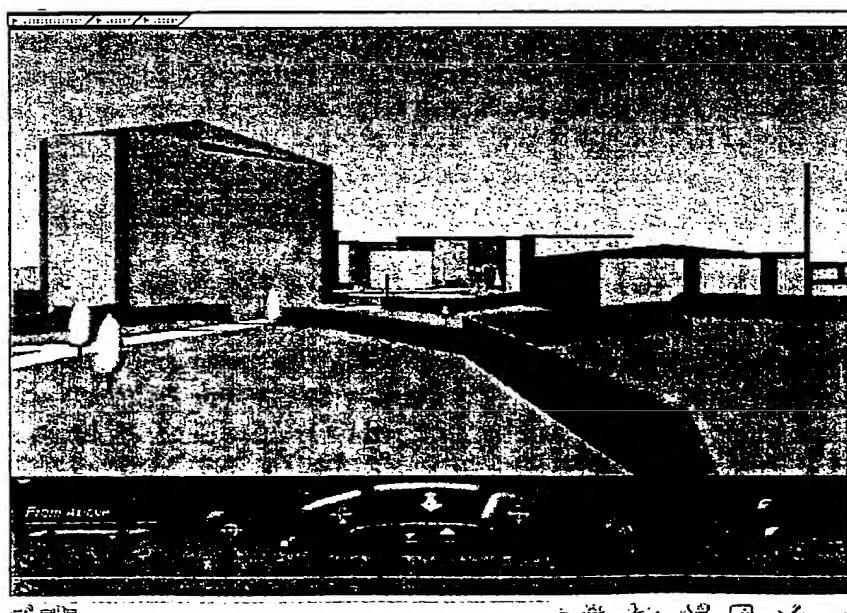
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```
LOD {  
    level [  
        Inline {url "FireHydrant1.wrl"}  
        Inline {url "FireHydrant2.wrl"}  
        Group {children []}  
        range [100, 200]  
        center 0 0 0  
    ]  
}
```

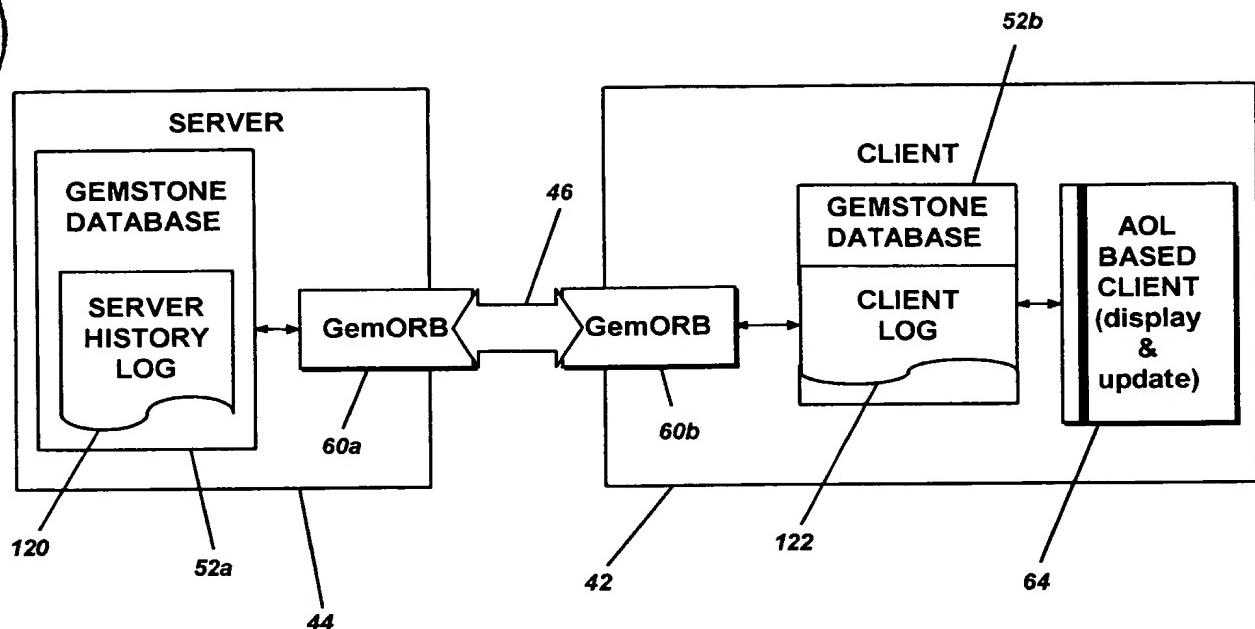
**FIG. 23**



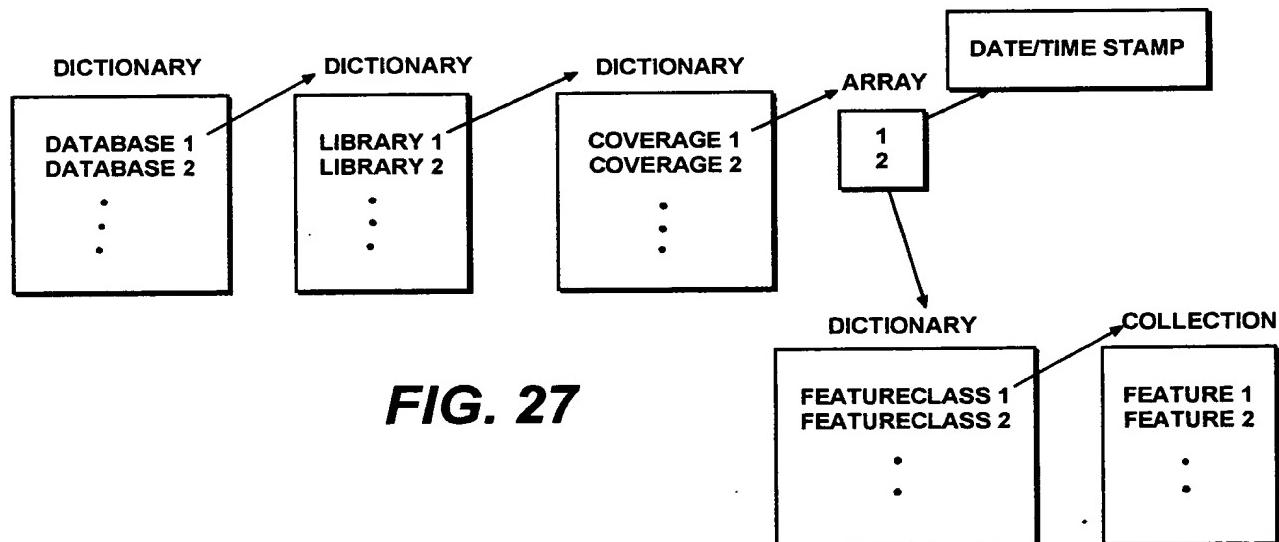
**FIG. 24**



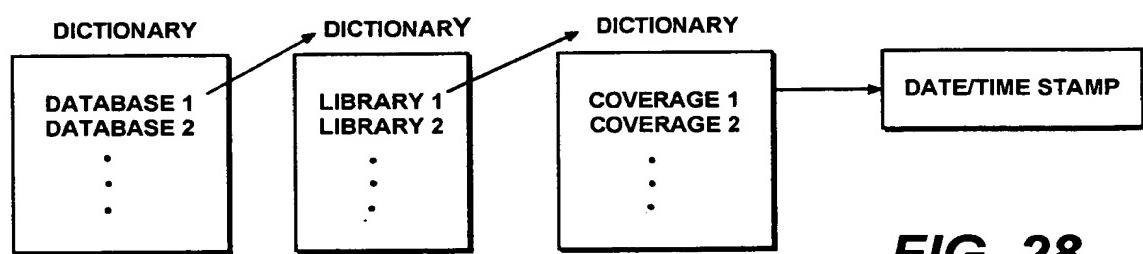
**FIG. 25**



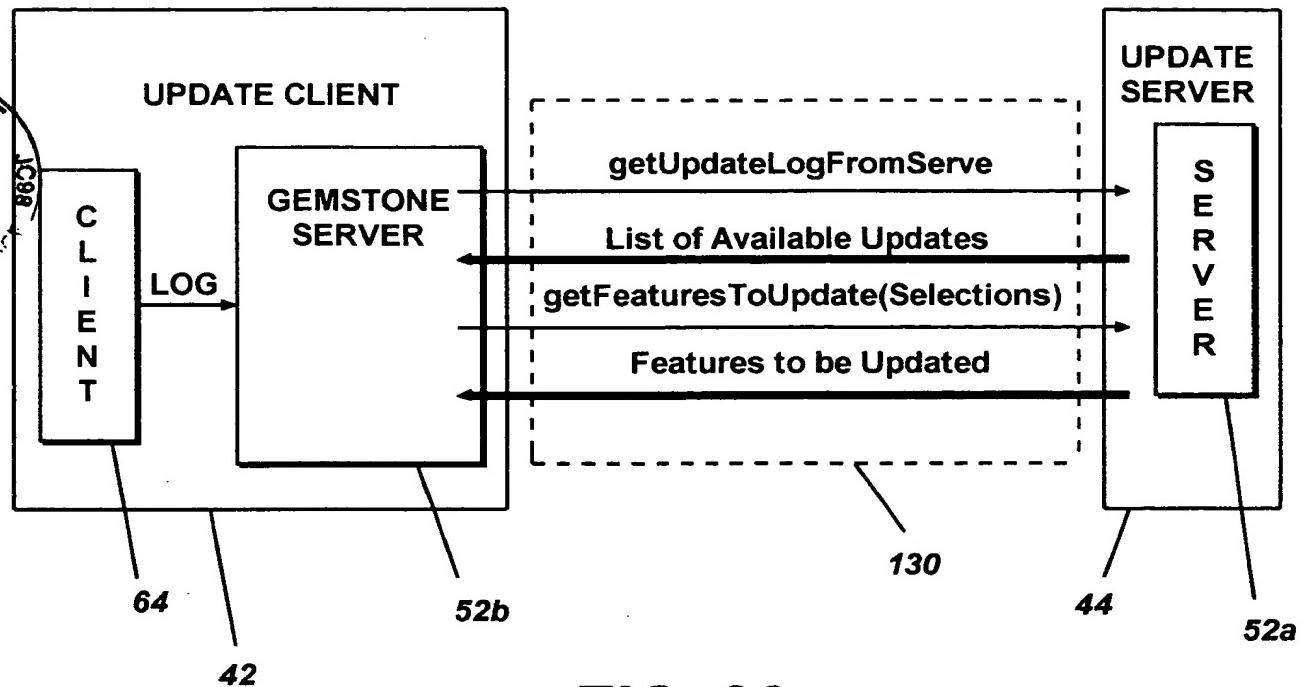
**FIG. 26**



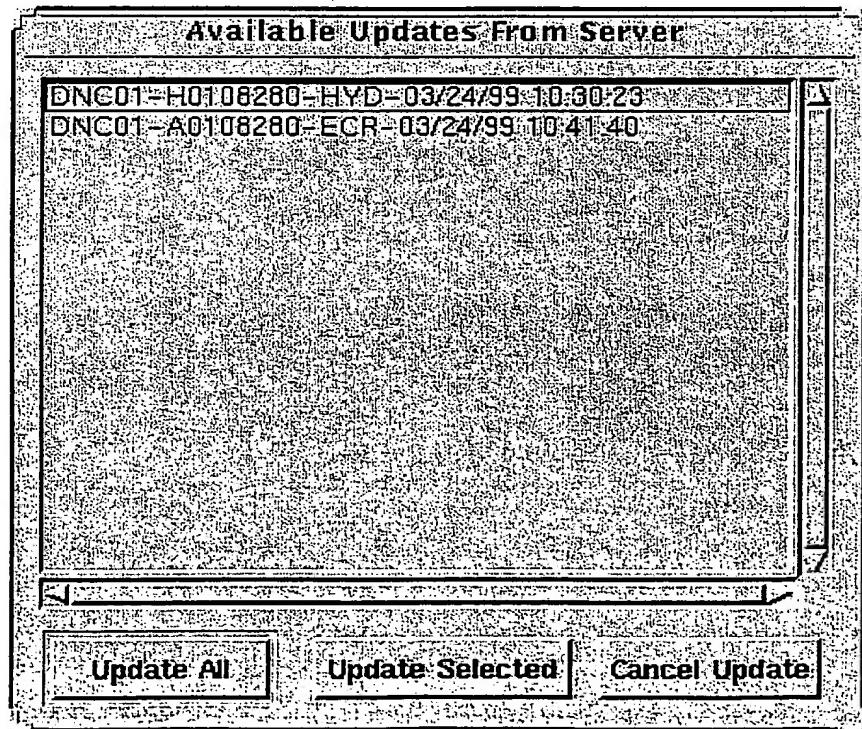
**FIG. 27**



**FIG. 28**



**FIG. 29**



**FIG. 30**

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